Lake Bedo—a little-known wetland hotspot in Madagascar

H. Glyn Young[a] and Felix Razafindrajao[b]

Lac Bedo—un point chaud peu connu à Madagascar. Le Lac Bedo (19°55'S 44°32'E), situé au centre-ouest de Madagascar, entre Belo-sur-Tsiribihina et Morondava, est peu connu par les ornithologues étrangers visitant le pays. Ce lac, qui s'étend sur environ 400 ha, est pourtant un site important pour des oiseaux d'eau, tels que cigognes, ibis, spatules, flamants, hérons, canards (la Sarcelle de Bernier *Anas bernieri* y est souvent présente) et limicoles. Les auteurs espèrent que l'intérêt ornithologique et l'accès facile au site attireront des visiteurs, qui sont invités à contribuer à une meilleure connaissance de l'avifaune en envoyant leurs observations à Madagascar@durrell.org.

Waterbirds are widespread in Madagascar and include representatives of 20 families of true waterbirds with 36 endemic taxa recognised (Young 2003). A typical itinerary of visiting birders includes some, usually small, wetlands, often adjacent to forest reserves. These sites are normally well known, frequently visited and may hold one or more endemics such as Madagascar Teal *Anas bernieri*, Meller's Duck *A. melleri*, Madagascar Plover *Charadrius thoracicus* or Slender-billed Flufftail *Sarothrura watersi*. Several larger wetlands, such as Lake Alaotra, are well known but rarely visited as they are difficult to reach and too large for easy searching. The majority of Madagascar's other large wetlands, however, are rarely visited by ornithologists and their waterbirds remain poorly known. Recent field work by local conservationists in western Madagascar has begun to show the importance of a series of saline lakes for a wide variety of waterbirds, in particular during the dry season. Of these lakes, those in Kirindy Mitea National Park, south of Belo sur Mer, and Lake Bedo, north of Morondava (Fig. 1), are of particular note. Whereas Kirindy Mitea remains very hard to get to, Lake Bedo (19°55'S 44°32'E) is very accessible and, being close to, but unseen from, the main Morondava to Belo-sur-Tsiribihina road, is on many visitors' routes—a fact that makes the poor knowledge of this wetland all the more surprising.

With this brief summary we hope that more birders will visit Lake Bedo and may in some way contribute to the economy of nearby villages, thus increasing local peoples' respect for the site and aiding researchers by sending in their records (to the authors at Madagascar@durrell.org).

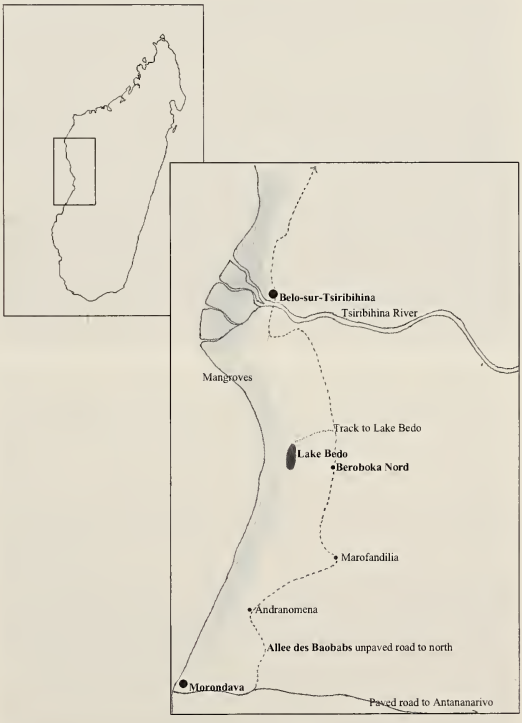


Figure 1. Location of Lake Bedo in western Madagascar.
Situation du Lac Bedo au centre-ouest de Madagascar.

Description of site

Lake Bedo is north-west of the village of Beroboka Nord at the southern end of an extensive area of tanne (the bare, salty, open ground on the landward side of coastal mangroves) that may be widely flooded during the wet season (January–March), and that stretches many miles

to the north. Areas within the tanne may be hyper-saline and salt-encrusted pools may develop (northern parts of this tanne have been extensively modified as a prawn farm). Lake Bedo, however, is filled partly by fresh water from the rains and is only slightly saline. This salinity affects the wetland's flora and rush (*Juncus*)-like vegetation predominates, and there are no water lilies *Nymphea* or beds of reed *Phragmites* or papyrus *Cyperus*. *Typha* marks freshwater channels and there are some areas of *Typha* marsh at the lake's ends. It is, however, this general salinity that prevents the conversion of the wetland to the rizculture that typifies so many of Madagascar's wetlands.

Historically, these southern limits of the tanne have not been fully mapped or adequately described. However, it is likely that they have changed extensively even in recent years: Otto Appert visited in June–July 1974 and described the area as the 'flooded area west of Beroboka' (Appert 1996) and Roger Safford in August 1993 found 'three small, seasonal pools (combined area of less than 1 ha)', and local guides were certain that no larger water areas existed at that time (Safford 1993 and *in litt.* 2005). Today the shallow lake occupies an area of *c.*400 ha, but the extent of open water may still be highly variable: in the height of the dry season, in September–November, it may occupy less than 100 ha in most years and in some it may dry out completely. The changeable nature of Bedo means that visitors in the future may, however, find a very different, but still highly important, wetland.

Extensive areas of flat, sparsely vegetated sand and dried mud border the open water for much of the year. Dry forest at the lake's western edge eventually joins the coastal mangrove. Baobab trees are common in the forest, as are lemurs, notably Verreaux's Sifaka *Propithecus verreauxi*.

The area was previously well known to duck hunters and, although not within a reserve, is included in the Important Bird Area 'Wetlands of the Tsiribihina delta and upper river' (Projet ZICOMA 1999, 2001).

Access

Lake Bedo is approached by driving off the main Morondava to Belo-sur-Tsiribihina road, the road famous at its southern end as the 'Allee des Baobabs'. A rough track to the lake goes through agricultural land, mostly grazing for cattle, and scrub before entering the dry forest bordering the eastern lake shore. The point where the track leaves the road is marked with a sign (which further informs visitors that hunting at the lake is forbidden), but the sign is not obvious and visitors are advised to stop in the roadside village of Beroboka Nord to ask for directions and, possibly, for a guide. The lake can be reached by foot through interesting scrub and forest from Beroboka, but it may be preferable to drive as the vehicle may make a good hide. The short drive along the forested track offers opportunities for watching scrubland and forest birds, particularly at dawn and dusk (see below). The lake can be watched from any one point on the shore. Drinks etc. can be readily purchased at several small local stores or restaurants (hotelys) in Beroboka Nord village.

Birds

Storks, ibises, flamingos and herons

The track comes out near the northern edge of the lake, where flocks of up to 200 African Spoonbills *Platalea alba* feed and may be joined by flamingos. The latter range widely in western Madagascar and numbers at the lake vary on an almost hourly basis: flocks of several hundred Greater Flamingos *Phoenicopterus roseus* in the morning may be replaced by equally large numbers of Lesser Flamingos *Phoeniconaias minor* by evening. Flocks may include both species and, in September and October 2004, recently fledged young whose origin is unknown (did they hatch in Madagascar or

Captions to photos on opposite page:

Figure 2. Lake Bedo turn-off, 16 October 2004 (H. Glyn Young)

Embranchement vers le Lac Bedo, 16 octobre 2004 (H. Glyn Young)

Figures 3–7. Lake Bedo, September/October 2004 (H. Glyn Young)

Lac Bedo, septembre/octobre 2004 (H. Glyn Young)

Figures 8–9. Lake Bedo from the air, June 2005 (Durrell Wildlife Conservation Trust)

Vue aérienne du Lac Bedo, juin 2005 (Durrell Wildlife Conservation Trust)

2

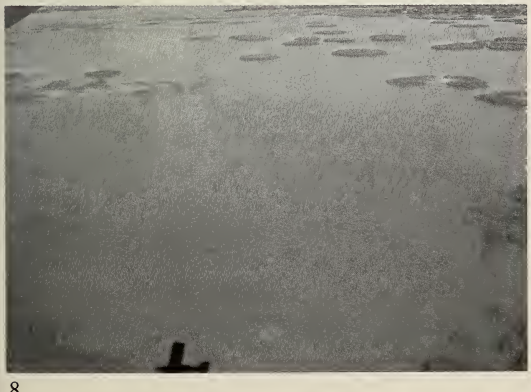
3

4

5

6

7



8

9

migrate from East Africa? *P. minor* is not known to breed in Madagascar).

Large numbers of Glossy Ibises *Plegadis falcinellus* forage in the lake and roost at dusk after feeding in rice fields to the south. Yellow-billed Storks *Mycteria ibis* are often present and flocks of up to 50 have been seen, sometimes joined by African Openbill Storks *Anastomus lamelligerus*. Herons and egrets may be abundant, including flocks of several hundred Black Egrets *Egretta ardesiaca* and large numbers of Great Egrets *E. alba*. Up to 25 Madagascar Herons *Ardea humbloti* may be present throughout the lake. Black-crowned Night Heron *Nycticorax nycticorax*, Grey *Ardea cinerea,* Purple *A. purpurea*, Squacco *Ardeola ralloides* and Green-backed Herons *Butorides striatus* are common. Dimorphic Egret *Egretta dimorpha* is rarer but usually seen, and singles of Little Bittern *Ixobrychus minutus* and the migratory Madagascar Pond Heron *Ardeola idae* are occasionally present. Madagascar White Ibis *Threskiornis* (*aethiopicus*) *bernieri* has been recorded at Lake Bedo in the past (Appert 1996) and, whilst not recorded here in recent visits, is still a possibility.

Wildfowl

Wildfowl numbers at Bedo can be exceptional at some times of year, particularly in the dry season as lakes elsewhere dry out, with *Dendrocygna viduata* and Fulvous Whistling Ducks *D. bicolor*, Red-billed *Anas erythrorhyncha* and Hottentot Teals *A. hottentota* the most common. Knob-billed (Comb) Duck *Sarkidiornis melanotos* too is often seen, as is, strangely (as there are no water lilies) African Pygmy Goose *Nettapus auritus*, although the latter may simply be moving between more typical habitats. Madagascar Teal nests in the nearby mangroves and can be found at the lake edges, usually shunning the flocks of other wildfowl and normally remaining in pairs: up to 17 have been counted recently. Red-knobbed Coots *Fulica cristata* may be common in the dry season (flocks of over 200) and may occasionally be joined by both Little *Tachybaptus ruficollis* and Madagascar Grebes *T. pelzelnii*. White-backed Duck *Thalassornis leuconotus* has not yet been recorded at Lake Bedo but has been seen nearby in the Andranomena Special Reserve, and although a lily specialist, like the pygmy geese, this highly dispersive bird may too stop off at Bedo as it moves between more suitable sites.

Rails

Rails at Bedo are usually shy and rarely observed. The exception is the noisy and conspicuous Purple Swamphen *Porphyrio porphyrio* whose elephantine trumpetings can be heard even as the lake is approached. Common Moorhen *Gallinula chloropus* is widespread and common and White-throated Rail *Dryolimnas cuvieri* and Baillon's Crake *Porzana pusilla* are relatively easy to find but their status at the lake is unclear—check the *Typha* beds. Sakalava Rail *Amaurornis olivieri*, as yet unrecorded at Lake Bedo, is a possibility as it has been found at other west coast lakes.

Shorebirds

Black-winged Stilt *Himantopus himantopus* (96 were counted in December) often nests quite openly. The shores are frequented by large numbers of small plovers. Kittlitz's *Charadrius pecuarius*, White-fronted *C. marginatus* and the rare endemic Madagascar Plover *C. thoracicus* occupy the drier areas and nest at the lake, whereas Three-banded *C. tricollaris* and wintering Greater Ringed Plover *C. hiaticula* can be found in the wetter areas. Madagascar Pratincole *Glareola occularis* too is easy to see when migrants from East Africa arrive in September and October.

Greater Painted-snipe *Rostratula benghalensis* is common in the more vegetated areas of the lake shore, but may prove hard to find until dusk. In the northern winter large numbers of Common Greenshank *Tringa nebularia*, Curlew Sandpiper *Calidris ferruginea* (1,000+) and Common Sandpiper *Actitis hypoleucos* are present, and Grey Plover *Pluvialis apricaria* and Little Stint *C. minuta* have also been recorded.

Other birds

Whiskered Tern *Childonias hybrida* may be very common and be joined by smaller numbers of Caspian Tern *Sterna caspia.* Pink-backed Pelican *Pelecanus rufescens* has been seen three times recently (21 September 2003 and 18 November and 12 December 2004: Mwema & Razafindrajao 2006). Raptors, notably Yellow-billed Kite *Milvus migrans aegyptius*, are common and the migratory Eleanora's *Falco eleonorae* and Sooty Falcons *F. con-*

color feed at the lake. Several passerines are found around the lake amongst which Madagascar Swamp Warbler *Acrocephalus newtoni* is perhaps the most notable.

Forest and scrubland birds

The drive to the lake and the forest surrounding it contain several endemics. The kestrels on the dead palms should be checked, as at least one pair of Banded Kestrels *Falco zoniventris* occurs. Care must be taken not to run over coveys of Madagascar Buttonquails *Turnix nigricollis* that seem to like the track better than the surrounding land. Madagascar Nightjar *Caprimulgus madagascariensis* and Sickle-billed Vanga *Falculea palliata* are easily seen from the track.

Acknowledgements

We are indebted to Durrell Wildlife Conservation Trust for their commitment to the conservation of wetlands and their bird fauna in western Madagascar. Thanks are due in particular to Joanna Durbin, Richard Lewis, Bin Aboudou Abdalah Iahia and our driver Bruno Razanadraibe. Roger Safford has been a constant source of support and advice throughout work at Lake Bedo, where HGY abandoned him in 1993, and Ron Demey helped with the preparation of this article. Above all, however, we wish to recognise the support and assistance of Department des Eaux et Forêts, especially the Chef Circonscription des Eaux et Forêts, Morondava, and the people of the region, notably in Beroboka Nord.

References

Appert, O. 1996. A contribution to the ornithology of the region of Morondava, western Madagascar. *Working Group on Birds in the Madagascar Region Newsletter* 6 (1): 18–54.

Mwema, M. & Razafindrajao, F. 2006. First Pink-backed Pelican *Pelecanus rufescens* sightings in Madagascar since 1960. *Bull. ABC* 13: 86–87.

Projet ZICOMA. 1999. *Les Zones d'Importance pour la Conservation des Oiseaux à Madagascar.* Antananarivo: Projet ZICOMA.

Projet ZICOMA. 2001. Madagascar. In Fishpool, L. D. C. & Evans, M. I. (eds.) *Important Bird Areas in Africa and Associated Islands: Priority Sites for Conservation.* Newbury: Pisces Publications & Cambridge, UK: BirdLife International.

Safford, R. 1993. The Madagascar Teal *Anas bernieri.* A preliminary survey from Antsalova to Morondava. *Dodo, J. Wildlife Preservation Trusts* 29: 95–102.

Young, H. G. 2003. Freshwater birds. In Goodman, S. M. & Benstead, J. P. (eds.) *The Natural History of Madagascar.* Chicago: University of Chicago Press.

[a] *Durrell Wildlife Conservation Trust, Les Augrès Manor, Trinity, Jersey JE3 5BP, UK. E-mail: Glyn.Young@durrell.org*

[b] *Durrell Wildlife Conservation Trust, BP8511, Antananarivo 101, Madagascar.*

Received: 18 May 2005; revision accepted 22 July 2005